

ROAD KILL OF INDIAN GIANT FLYING SQUIRREL (PETAURISTA PHILIPPENSIS) IN COONOOR TO METTUPALAYAM HIGHWAY, THE NILGIRIS.

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Introduction:

The construction of a road directly and indirectly impacts the ecosystems where the road is built. Direct impact of road construction includes automobiles running over wild animals (road kill), losses are division of wild animal's habitat and its as serious impediment to wild animals. The impacts of roads on wildlife species are well documented, aside from the fact that roads may prove beneficial to some wildlife, as habitat for plants and Road side corridor, they can also create barriers to movement paths, eliminate and alienate habitats and be a source of mortality. Road related mortality is the visible and direct effect roads have on wildlife (Clevenger *et al.*,

2006) In India, highways bisect many protected areas. It has been realized in recent years that highways cause severe impact to wildlife and their habitats (Gokula, 1997; Gruisen, 1998; Vijayakumar *et al.*, 2001).

This short note is part of our field observation recorded on the highway from Coonoor to Mettupalayam, Nilgiris. The Nilgiri has a wide variety of flora and fauna. It is also one of the famous tourist spots in India. The district has several road networks that are bisecting the forest contiguous in many areas. It causes many problems to the wild animals as well as the environment. Coonoor to Mettupalayam highway is about 37.7 km stretch that passes through fourteen hairpin bends, mainly blind curves and bridges on the mountains. Apart from these human encroachments in the name of roadside shops, settlements and plantations, as so considered as a threat to wild animals, especially the large mammals like elephants (Ramakrishnan *et al.*, 2012).



Fig 1. Road kill of Indian giant flying squirrel in Coonoor to Mettupalayam highway

On 22.09.2013 early morning around 6.00am we had encountered a road kill of one mammalian species on the Coonoor to Mettupalayam Highway near Burliyar (N 11.339562 E 76.835632) (Fig 1). We photographed the specimen for further identification. We had referred Prater (2005) the road-killed species was the Indian giant flying squirrel (*Petaurista*

philippensis). Two species of flying squirrels found in the Western Ghats. Of which the Indian giant flying squirrel (*Petaurista philppensis*), and the generalist endemic Travancore flying squirrel (*Petinomys fuscocapillus fuscocapillus*). Indian giant flying squirrels (*Petaurista philippensis*) are arboreal, nocturnal in habit and small mammals that live in tree cavities and the tree canopy. It has a wide distribution in Asia. This species can be found in South Asia, the mainland of Southeast Asia, and central and southern China. it has been also recorded from Hainan Island, Yunnan, Sichuan and Shaanxi (Smith and Xie 2008) In South Asia they have a patchy distribution in Sri Lanka and India, primarily concentrated in the Himalayan Mountains and northeast regions north of Bombay and Rajasthan from north India, and sporadically distributed in the western Ghats region of south India. They live in deciduous and evergreen forests of South Asia, hardwood forests of Taiwan, and large patches of forests on Hainan Island, where the species is currently thriving. This species can be found in elevations between 100 to 2,500 meters asl (Duckworth 1998). Umopathy and Kumar (2000) reported that a density of this species has highly disturbed rain-forest fragments in the Anamalai Hills of the Western Ghats. Indian giant flying squirrels are folivorous, however, they will also eat bark, fruit, leaves, flowers, and sometimes lichens. Most frequently, they consume ficus fruits, which is easily accessible source of energy. Nandini *et al.*, (2008) reported that the ficus fruits are rich in calcium, minerals, low in fat content, and a possible source of animal protein, as provided by larvae of fig wasps. The plantation like Tea, Coffee, Jack fruit and Banana are available along with several human settlements on Connoor to Mettupalayam Highway. Ashraf *et al.*, (1993) stated that *P. philippensis* was encountered mostly in cardamom plantations in Western Ghats. Nandini *et al.*, (2008) reported that the Indian giant flying squirrel were distributed high amount in plantations and forest edges than the interior forest areas. Ramakrishnan *et al.*, (2012) reported that the elephants were used the Kallar, Jakkanari corridors mainly because of jack fruit, banana and ficus trees are predominately distributed in this areas. Feeding ecology of the Indian giant flying squirrel by Nandini *et al.*, (2008) reveled that mostly preferable food species are Ficus (*Ficus racemosa*), (*Cullenia exarillata*) and Jack fruit (*Artocarpus heterophyllus*). The traffic intensity by Ramakrishnan *et al.*, (2012) reported that the Coonoor to Mettupalayam highway is the main connective road for the Queens of Hills Ooty. The traffic intensity survey showed that mostly more number of vehicles were encounter in-between the period of 6am to 12 pm an

average of 300.5 vehicles were encountered per hour during that survey mostly the four wheelers are encountered in more numbers. This heavy traffic is would act as a serious impediment for the movement of wild animals especially the elephants when during migration. These squirrels predominately show crepuscular activity patterns, with increased activity around dawn and dusk. However, their activity patterns varied per month. During the winter to early spring, the species became less active near midnight. From spring to early summer, they become active nearly all night. (Kuo and Lee, 2012). The threats for this species was notified that habitat loss and degradation resulting from logging, shifting cultivation, expansion of human settlements and forest fires (Molur *et al.* 2005). The population declining of this species was reported in Western Ghats and also in northeastern India (Molur *et al.*, 2005). The recent observation of Indian giant flying squirrel on road kill due to vehicle hit reveals that the forest area along the Coonoor to Mettupalayam highway supports Indian giant squirrel population. Although none of the studies were attempted in this area, Nandhini *et al* (2008) Umapathy and Kumar (2000) studies strongly supports that the Indian giant flying squirrel successfully thrives in plantations and forest edges. The present observation area is also one of such area that may supports for Indian giant flying squirrel population. Unfortunately this Indian giant flying squirrel might fell down when it was effectively feeding during night hours while moving between the branches or tree across the road. This observation envisages that the presence of Indian giant flying squirrel in this area first of its kind and also effects of vehicles intensities on wildlife damage between Coonoor to Mettupalayam highway.

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